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Works recently published:—

- Caisse de Retraites et Pensions Viagères pour la Vieillesse. Paris. 1850.
- Church Leases. By W. H. Grey, Accountant and Arbitrator, Associate of the Institute of Actuaries of Great Britain and Ireland, and Secretary to the Committee of Members of the Committee of the two Houses of Parliament on Church Leases. London: J. Ridgway, Piccadilly. 1851. 2s. 6d.
- Etudes Statistiques sur la Mortalité et la Durée de la Vie dans la Ville et l'Arrondissement de Dijon, depuis le 17^e Siècle jusqu'à nos jours. By M. C. Noirot, M.D.. Paris: J. B. Baillière, Rue de l'Ecole de Médecine. Dijon: La Marche et Drouelle, Place St. Etienne.
- Medical Combinations against Life Assurance Companies. London: Orr & Co. 1851. 1s.
- Statistical Journal. Vol. XIV. London: J. W. Parker. 2s. 6d.
- Part I., March, 1851.—Vital Statistics of Ireland. By P. A. Schleisner, M.D.—Contribution to the Vital Statistics of Scotland. By James Stark, M.D., F.R.S.E., Fellow of the Royal College of Physicians, Edinburgh.
- Part II., May, 1851.—Mortality and chief Diseases of the Troops under the Madras Government, European and Native, from the years 1842 to 1846 inclusive, compared with the Mortality and chief Diseases of 1847. By Lieut.-Col. W. A. Sykes, F.R.S.
- The Property and Income Tax the Best Tax for the Community, &c. By E. Erskine Scott, Esq., F.I.A., Actuary of the East of Scotland Life Assurance Company.

INSTITUTE OF ACTUARIES.

HAVING in the three preceding Numbers of the *Assurance Magazine* given an epitome of the Reports, so far as they have been published, of the Assurance Companies of Great Britain in various branches of the business for one entire year, from September 1849 to September 1850, we had intended in this and following Numbers to have continued the series to the latest date. The importance, however, of the Meeting which was held in the rooms of the Institute, and the dinner which was given to the representatives of Assurance interests in foreign countries, and to other distinguished men in this country who have devoted themselves to sanitary statistics, and other questions of social and political economy, in which actuaries ought to be conversant, will prove, we hope, a sufficient apology for devoting the remainder of our space to give as complete a report as we can put together of the proceedings of the 5th of July.

No one who took part in these proceedings can hesitate to believe that very important consequences are likely to result from what at first might appear only a social and festive meeting. The extraordinary activity and energy with which the business of assurance in some branches has been prosecuted on the Continent has but lately become known in England; and we must confess that the information obtained in reply to our inquiries has affected us with somewhat of surprise as well as gratification. The talent,

cultivated intellect, and commercial enterprise of the distinguished visitors, many of whom on this occasion had made a long journey expressly to be present at the Meeting, have left behind them a feeling of respect and esteem, which we are confident will increase as other opportunities occur of cultivating an acquaintance so auspiciously commenced; whilst the genuine good feeling with which our advances were received, is unequivocally evinced by their desire to promote the objects of the Institute, and to make those researches by which our collections of facts may be improved, and the theory of probabilities applied more extensively in practice. We trust that the result will be, that not merely will the solutions of many difficult problems in vital statistics be obtained from the accurate and varied data thus brought under review, but that many other subjects which are now left to the chance of individual experience, and sometimes even exposed to the risks of the pretending or the deceptions of designing men, may be reduced to order and simplicity, and be governed by the rules of pure and accurate science.

Amongst a large number of the Members of the Institute, there were present at the conference the managers of some of the principal Life, Fire, and Maritime Assurance Companies, or other men of science who had taken an interest in sanitary or vital statistics, in France, Austria, Prussia, the German States, Russia, Holland, Belgium, and America. The only thing to be regretted was that longer time could not be devoted to the discussion, and to the reading of the papers which were presented to the Meeting. We have, however, given some of these *in extenso*, together with a translation of an interesting paper in German, prepared expressly to be laid before the Meeting, by Herr Masius, a distinguished writer in Leipzig; who, besides other publications on the subject, for some years conducted a journal devoted to assurance questions, under the title of *Allgemeine Versicherungs Zeitung*, and now edits a monthly periodical of a similar kind, the *Rundschau der Versicherungen*. This paper contains, as will be seen, a complete summary of all branches of assurance as now carried on in Germany. M. Dubroca, the talented editor of the *Revue des Assurances*—a periodical now in the seventh year of its publication—in Paris, and which we have so often found it necessary to quote in these pages, was present at the Meeting, having come, with other distinguished managers of French Companies, expressly to do honour to the occasion; so that both the literature and the practice of assurance might be considered as worthily represented.

As these Meetings form part of the Proceedings of the Institute, we place the account of them in the order in which they naturally fall, viz., immediately subsequent to the sessional meeting held in June.

PROCEEDINGS OF THE INSTITUTE.

Sixth Sessional Meeting, 1850–51.—Monday 28th April, 1851.

PETER HARDY, Esq., F.R.S., V.P., in the Chair.

The Minutes of the last Sessional Meeting having been read and confirmed, the Vice-President announced the following contributions to the Library, viz.:—

Chess Problems. By W. Lewis, 1827	Presented by
Fifty Games at Chess. By W. Lewis, 1832	The Author.
The Match at Chess played by the London and Edinburgh Chess Clubs 1824-28. By W. Lewis, 1828	Do.
A Treatise on the Game of Chess. By D. Pietro Carrera. Translated from the Italian by W. Lewis, 1822	Do.

The following Candidates, duly proposed at the last Sessional Meeting, were elected Associates of the Institute, viz. :—

Joseph Clarke.
Bryan Edward Cookson.
John Edward Tresidder.

Mr. Pinckard read a paper "On the Practice and Experience of the Clerical, Medical, and General Assurance Society, chiefly with regard to Invalid Lives."

The Vice-President stated to the Meeting that he had been deputed by the Council to announce to the Members that, as on the occasion of the Great Industrial Exhibition it was probable that many foreign gentlemen connected with Continental Societies for the Assurance of Lives, and of Fire, and Maritime Risks, would be in England about the period of the Anniversary Meeting and Dinner of the Institute, they had put themselves in correspondence with a great number of these gentlemen, and had invited them to partake of the hospitality of the Institute. To these invitations many answers in the affirmative had been received, and the Council had formed themselves into a Committee, with power to add to their number, for the purpose of making the necessary arrangements. The Vice-President added, that the Committee thus formed would gladly receive any suggestions in writing from the Members generally, supposing any of them should be disposed to assist the Council in their labours.

Seventh Sessional Meeting, 1850-51.—Monday, 26th May, 1851.

PETER HARDY, Esq., F.R.S., V.P., in the Chair.

The Minutes of the last Sessional Meeting having been read and confirmed, the Vice-President announced the following presentations to the Library, viz. :—

May (J. E.), A Treatise on the Law, Privileges, Proceedings, and Usage of Parliament	Presented by
Scratchley (A.), A Treatise on Benefit Building Societies. Second Edition. 1851	Mr. Laurence.
Grey (W. H.), On Church Leases. Third Edition. 1851 (2 copies)	The Author.
Latham (H.), Geometrical Problems	Do.
Jones, On Book-keeping. Part I. Fifth Edition	Do.
Ditto Part II. Seventh Edition	Mr. Orchard.
Bradley's (T.) Practical Geometry. 1834	Do.
Lacroix (S. F.), Essais de Géométrie. 1822	Mr. Bailey.
Newton's Principia, Sections 1, 2, 3, 9, and 10. Edited by J. H. Evans, M.A. 1837	Do.
Quetelet, On Probabilities. 1849	Do.

Mr. Jellicoe then read a paper "On the proper Allowance to be made for the Surrender of Policies of Assurance."

Annual General Meeting, 1850-51.—Saturday, 7th June, 1851.

PETER HARDY, Esq., F.R.S., V.P., in the Chair.

The Minutes of the last Sessional Meeting having been read and confirmed, the Secretary read the circular convening the Meeting.

The Treasurer's statement of the Receipts and Expenditure for the financial year ending the 30th April last was read.

The President, Council, and Officers for the year 1851-52 having been elected, the following Bye-Laws were discussed and adopted, viz.:—

“That no person shall be admissible to the Institute unless he be approved by the Council.”

(The Bye-Law announced at the Fourth Sessional Meeting being annulled,) That the following words be added to Clause IV. of the Constitution and Laws of the Institute :—

“And in the latter case he shall remain ineligible for renomination till the next Session.”

That Clause XX. be altered and stand thus :—

“Any Member whose annual subscription shall be in arrear for two months shall be applied to in writing by one of the Secretaries, and shall be incapacitated from voting at the Meetings of the Institute, or exercising any other of the rights of a Member, until such subscription be paid; and if the same be not discharged before the first Saturday of May next following, he shall be declared a defaulter, and shall cease to be a Member of the Institute.”

That in future the Annual Meeting be held in July instead of June.

That in Clause XL. the words “four or more Members of the Institute, of whom a moiety at least shall be Fellows,” be substituted for the words “two Fellows, an Official Associate, and an Honorary Member, or in lieu of the last a third Fellow.”

That the following words be added to Clause XLI. :—

“And it shall consist of three parts, separated from each other by an interval of at least one year, and no Member shall be eligible for the final examination unless he shall be of the full age of twenty-one years.”

Eighth Sessional Meeting, 1850-51.—Monday, 30th June, 1851.

CHARLES JELlicoe, Esq., V.P., in the Chair.

The Minutes of the Annual General Meeting having been read and confirmed, the Vice-President announced the following contributions to the Library, viz. :—

	Presented by
Gill (C.), On the Application of the Angular Analysis to the Solution of Indeterminate Problems of the Second Degree. 1848	The Author.
Sylvester (J. J.), An Essay on Canonical Forms. 1851	Do.
Lafond (G.), Guide de L'Assureur et de L'Assuré en Matière D'Assurances Maritimes. Paris. 1837	Do.
Lafond (Le Capitaine Gabriel), Quinze Ans de Voyages autour du Monde. Paris. 1840. (2 copies)	Do.
Joliat (M. H.), Journal des Assurances from 1831 to 1840 inclusive. Paris. 6 vols.	Do.
Babbage (C.), Table of Logarithms of the Natural Numbers from 1 to 108,000. Stereotyped. 1829	Mr. Farren.
Logarithms, Tables thereof. 1839	Do.
Tarif des Retraites ou Rentes Viagères. Paris. 1851	M. Guerry.
Vanhoorebeke (L. Bastiné et E.), Observations sur le Système des Assurances par L'Etat. Bruxelles. 1847	M. Flemmick.
Langheinrich (W. A.), Zwei Tabellen zur Schnellen und Sicheren Berechnung der Zinser-Zinsen. Erfurt. 1851	Herr Lobeck.
Quetelet (M. A.), On the Theory of Probabilities. Translated from the French. By O. G. Downes. 1849	Messrs. Layton.
Caswall's (A.) Treatise on Copyholds. Third Edit. 1841	Do.
Newton's (Sir I.) Principia, Commentaries thereon. By the Author of “A New Theory of Gravitation.” 1846	E. Cheshire.

Mr. Frederick Hendricks, Actuary to the Globe Insurance Company, was unanimously elected a Fellow of the Institute.

The Vice-President announced that the Council had received from the Examiners their Report of the result of the Examination for 1851, and that he had much pleasure in stating that all the candidates had been found duly qualified, and entitled to receive the usual certificates of competency. The names of the candidates, in alphabetical order, were as follow, viz. :—

Edward Cheshire, 12, Chatham-place, London.

Christian Child, Alliance Life Assurance Company, London.

Alexander Colvin, United Mutual Mining and General Assurance Society, London.

James Meikle, Scottish Provident Institution, Edinburgh.

Henry Thomson, Jun., Northern Insurance Company, Aberdeen.

Mr. Samuel Brown then read a paper "On the recent Progress of the Assurance of Life and Property on the Continent."

General Meeting of the English and Foreign Representatives of Assurance Interests, held at the Rooms of the Institute on Saturday, July 5th, 1851.

CHARLES JELlicoe, Esq., V.P., in the Chair.

The Chairman rose and said :—"Gentlemen, the variety of important subjects connected with our common pursuit is so great that many days would not suffice to discuss them, much less two hours. It has been thought, however, highly desirable to seize the opportunity afforded by the presence of our foreign friends to elicit at least some of their opinions ; and the two questions about to be brought under consideration have been selected as lying at the very foundation of almost all our investigations. As we are all anxious to hear those gentlemen who have come so far to favour us with their presence, I will at once call upon Mr. Neison to open the discussion on the first question, viz. :—

'What are the principal existing data, here and abroad, to which the doctrines of Probability may be applied (with a view to organize systems of Assurance), and from what sources can better be obtained ? ' "

Mr. Neison.—"Mr. President, I have considerable diffidence in venturing without preparation to open the discussion of so comprehensive and important a question, and I feel this difficulty the greater from the presence of so many learned and distinguished visitors, who may be led to expect a greater amount, variety, and novelty of facts, information, and principles than I shall be enabled to bring under your attention within the limited time assigned for the introduction of this debate. There can be little doubt that the two questions now propounded comprehend almost the whole range of studies which fall strictly within the sphere of the Actuary's duties as hitherto required of him by society, and it would be evidently fruitless to attempt anything like a full elucidation of the principles which should guide him in the practical application of the physical or monetary laws embraced in the propositions proposed for discussion, or to enter fully on the difficulties connected with the practical application of those principles, and the suggestions which might be offered for the improvement and augmentation of the data, and doctrines deducible therefrom, necessary to give permanence and significance to the mission and status of the Actuary. I shall hope therefore to be excused, under the circumstances, for any abruptness which may appear in the few brief remarks which I shall now submit for the consideration of this meeting. Since entering this room it has been observed to me by Professor Friedländer, that a remarkable improvement has taken place in the duration of life, particularly among the middle classes, during the last sixty or seventy years. My friend is not singular in holding such an opinion, for it is equally entertained by other dis-

tinguished authorities on vital statistics. Still there is strong reason to hesitate in the adoption of such views, and it would be well to consider on what grounds they are generally held, and the authority and evidence on which they rest.

“Without entering on the history of the early progress of inquiries on the rate of mortality among different classes, I believe the purposes of the present discussion will be sufficiently served by retracing our knowledge on this subject from the period of the most active and successful efforts made to impress on society the importance of having strict regard to well-ascertained laws of mortality in pecuniary transactions on life. The honour of this great achievement in human knowledge belongs to the celebrated Dr. Price, and to his writings is mainly traceable the origin of the opinion, that in recent years the duration of life is much prolonged. The well-known Table of Mortality, usually, although erroneously, called the Northampton Table, and which is based on facts relating to the middle of the last century, exhibits a certain duration of life, and for a long time this table continued to have undivided sway and authority in the estimation of writers and those engaged in assurance transactions, as indicating a near approximation to the rate of mortality among certain classes of the community. At last, however, the late Mr. Milne brought under public attention the Table of Mortality known as the Carlisle Table, and although the data embodied in this table had reference to a period not much subsequent to the time to which the data of the Northampton Table relate, still, from its more recent promulgation, the impression produced on the public mind was that which would naturally arise from other scientific writings, that each table represented the state of the science at a period near to the date of its appearance.

“The remarkably increased duration of life evidenced by the Carlisle Table over the Northampton could not fail to arrest public attention, and the elaborate and able work in which Mr. Milne had issued his table into the world, claimed for it an information and consideration not before conceded to even the labours of Dr. Price himself. An examination of the writings of this period will at once satisfy any inquirers that in a very short time after the appearance of Mr. Milne's work, the Carlisle Table began to grow in favour and public estimation, and hence, from the misconception that its recent appearance was evidence also of the recent origin of its data, and from the increased duration of life deducible from it, an opinion prevailed that, since the appearance of Dr. Price's writings, an improvement had taken place in the public health. This impression has continued to gain ground until the present hour. It is consequently important to test the correctness of this opinion, not only from its bearings on recent legislative proceedings, but also from the remarkable hold which both classes of results have taken of the assurance interests of this country, as well as of the continent. At first glance it must be evident that, from the almost cotemporaneous but remote origin of the data of both tables, the observable difference in their rates of mortality could not be held to show any improvement in the duration of life in the recent more than in the remote ones. Besides, if a difference really does exist in their rates of mortality, that difference can be supposed to be only due to the local circumstances and influences peculiar to the small districts from which the data were collected, and, however true the results may be considered in regard to the districts so represented by the data, it is impossible from their evidence alone to regard either as a type of the rate of mortality prevailing at a former or the present period among either the assurance classes here or elsewhere, or as affording any evidence of the rate of mortality in the country generally, or in individual classes of the population.

“Having said this much on the influence which the Northampton Table has exercised on the public mind, it is a very curious but mortifying circumstance to discover at this advanced stage of our progress that the gigantic monied interests of our greatest companies have long relied, almost exclusively, on a table which has been falsely constructed, and which, in fact, does not represent the rate of mortality in the locality from which the data

have been collected, nor, as will hereafter appear, the rate of mortality in the country generally, nor among the assured portion of the community. The Appendix to the Eighth Report of the Registrar-General contains one of the most valuable and interesting papers ever published in connection with the Northampton Table. Not only in an historical point of view, but also on account of its practical applications, the paper is one of first importance to Life Offices. To the author, Mr. Farr, the assurance interests of this country must be considered deeply indebted. At the period when Dr. Price constructed the celebrated Northampton Table, he did not possess all the elements necessary to determine correctly the rate of mortality in the locality under investigation, and to supply the defective element he had recourse to an hypothesis which recent inquiries have proved to be erroneous. This should not be considered in the light of a reflection on Dr. Price, for there is reason to believe that with the imperfect materials at his command it would have been difficult to have followed a better plan than that which he adopted; but still Mr. Farr has been enabled to advance historical evidence to show that the hypothesis was a fallacious one, and that consequently the rate of mortality deduced therefrom is also erroneous. From the deaths which have taken place in 'All Saints' parish, Northampton, during the seven years 1838-44, being the same district to which Dr. Price's facts relate, Mr. Farr has constructed a Table of Mortality on the plan adopted by Dr. Price in the construction of his Table for the 46 years 1735-80; and although an interval of sixty years has elapsed between the periods to which each class of facts belongs, still it is curious to find that little or no change has taken place in the rate of mortality, and the one table might be used for the other. It is, however, important to understand that the method followed by Dr. Price in the construction of his table is now admitted by all authorities to be wrong; and any one who at this time would venture upon a similar course must necessarily sacrifice all public esteem for scientific accuracy. The parallel table by Mr. Farr has been purposely constructed on the same plan, and the results of both agree so closely that it is impossible for any one to argue therefrom that since the middle of the last century any improvement whatever has taken place in the duration of life in Northampton. Mr. Farr has, however, not stopped at this stage of the inquiry, but has gone further. He has formed a table on true principles from the data referred to for the seven years 1838-44, and the results arrived at do not differ widely from the rate of mortality shown in Mr. Milne's Carlisle Table, and other tables more recently promulgated. If therefore the facts treated by Mr. Farr, on true principles show so great an improvement in life, there is every reason to believe that the materials with which Dr. Price had to deal would also have shown similar results had they been properly treated, and consequently, so far as the Northampton and Carlisle Tables are concerned, there is no reason to believe that any augmentation has taken place in the duration of life during the last hundred years.

"The Northampton and Carlisle Tables have been dwelt on from the importance they have assumed in the practice of Life Offices. There are, however, other local tables, as the Chester and others, to which reference might be made if necessary. Proofs of the like stability in the rate of mortality may also be derived from observations of large masses of mankind. The mortuary registers of Sweden in a very complete form go as far back as the year 1751, and up to the present time no improvements appear to have taken place in the duration of life. The results for that kingdom, for the last 100 years, do not appear to differ much from the rate of mortality in this country during the last 10 years. Again, in France, if the tables of Demonferrand are to be relied on, the value of life there does not differ in any material degree from that indicated by either of the other classes of results. It is however right to remark, that the French people, although so much advanced in scientific knowledge and civilization, are still indifferent to the advantages of a proper census of the people; and M. Demonferrand has been compelled, owing to the ages of the population being unknown, to resort to an expedient in the construction of his table, which may probably not affect its value in any material degree. As far therefore as Life Offices are concerned, it does not yet appear that we possess

any data which bear directly and intimately on their risks. Life Offices in this country have had their transactions almost exclusively with the middle and upper classes; and the same remark is to a great extent applicable to the experience of Companies on the Continent and in America: therefore, whatever value may be attached to any of the mortality tables hitherto referred to, they cannot in the absence of other evidence be considered as applicable to the purposes of Assurance Companies. The public is indebted to our President, Mr. Finlaison, for what is called the Government Tables; but these, irrespective of inherent evidence of anomalous conditions, could scarcely be thought applicable to the purposes of a Life Office; for as the bulk of the data has reference to a remote period of years, if any value is to be attached to prevailing opinions on the recent improvement of life, the data must be wholly inapplicable to the present time. It may also be here remarked, that the tables usually quoted as the Government Tables are not those based on the corrected and revised data of 1829, but those given in the reports of 1824; and what the public really speak of as being the Government Table is not in fact that finally adopted.

"We have, however, tables derived directly from the experience of Life Offices, the Equitable and Amicable Societies; but the bulk of the facts of both tables relates to remote years, and, therefore, if any importance is to be attached to the recent improvement in life, they are clearly not applicable to present operations of Assurance Companies. There is likewise the table usually denominated the "Experience Table," deduced from the recorded observations of seventeen Life Offices reported on by the Committee of Actuaries appointed in the year 1839. In these observations, like those deduced from the Amicable and Equitable Life Offices, the bulk of the facts has no reference to recent years; but there is a much more serious objection to be brought against the results given in the "Experience Table." From the indisposition evinced by the Contributory Offices to let their individual experience be known even to the members of the Committee to whom the inquiry was intrusted, it became necessary that the different schedules should be submitted in an anonymous form,—all were given with blank headings, and so completely mixed up together, that it was impossible afterwards to determine from what Office any particular schedule came. This arrangement prevented the investigation being any other than one confined to the policies issued by those Offices, and not an estimate of the mortality among a certain number of lives. To those therefore of even limited experience, it must be obvious that the results are thereby deprived of all value, as indicating the rate of mortality among the Offices contributing the facts. Nothing is more notorious than the frequency with which the same life is assured in duplicate and triplicate, not only in the same Office, but in several Offices; and it often happens that on the same life there has at one time or another been issued as many as from 20 to 50 policies, in the different Offices conjointly. To take an extreme example, in order to show the nature of the principle, and its effect in vitiating the truth of any results derived from a calculation founded on the number of policies, and not upon the number of lives,—it is well known in most of the Assurance Offices, that a distinguished personage was so fully assured in the Life Offices in this kingdom, that it was impossible to obtain any further policies on his life from Assurance Companies; and it has been said that recourse was had to Lloyd's to have his life underwritten there. The policies existing on this life at one time, it has been considered, could not be less than three or four hundred; it is hence evident that a death taking place, under such circumstances, would in the result of such inquiry appear as three or four hundred deaths, while in fact only one had happened. In like manner, the fact of the life still surviving would produce the anomalous result of there being 1000 or 2000 years of life, depending on the duration of these policies, without any recorded death. It is therefore clear, that unless the principle of repeated policies on the same life was uniform as to numbers, and very generally characteristic of the bulk of assurances effected, that compensation errors could not be expected to take place sufficient to render the results even a near approximation to the truth. So far, therefore, we are as yet without any satisfactory

data, derived directly from Life Offices of this country, which can be relied on as indicating the rate of mortality among the assuring classes in recent years. On the Continent, however, we have been furnished with the experience of the Gotha Life Office; and in this instance the results are free from the objections just alluded to, as the investigation has been conducted on the number of lives, and not on the number of policies. The experience of the Gotha Life Office shows this remarkable and peculiar feature in the rate of mortality to which the members are subject. At the younger ages the mortality is much less than that indicated by any of the other tables yet alluded to; but at the older ages the rate of mortality is very much greater. At present it is difficult, if not impossible, to account for this peculiarity. Whether it be due to the different circumstances and habits of life of our continental neighbours, or whether it arises from some mutation in the physical condition of the assuring classes in recent years, and is common to our own country, it is difficult to say; for we have no sufficient amount of data relating to the last twenty years, within which the facts of the Gotha Life Office are limited: but that some such explanation may be possible is supported by a valuable body of facts made known to the public within the last few days. Professor Gill, the actuary of the Mutual Life Assurance Company, of New York, and with whose presence we are on this occasion honoured, has recently reported on the rate of mortality among the members of that Society, during the eight years which had elapsed from its establishment, until February 1851; and although the experience is not so extensive as that of the Gotha Life Office, still it embraces between 17,000 and 18,000 years of life, and is therefore valuable and curious, as showing the same peculiar features in the rate of mortality described as characteristic of the Gotha Company's experience,—only at the older ages the mortality is even higher than that of the other. It would be certainly of great importance to the interest of Life Offices to determine accurately, whether this be a prominent feature of the mortality prevailing generally, not only in this country, but elsewhere, among the assuring classes; and I do hope that the fact of so numerous a meeting of the representatives of Life Offices of this country being assembled here this day, to meet their distinguished brethren from the continent of Europe, and from America, argues well in favour of an effort being made, at no distant date, to collect and convey in an intelligible and satisfactory manner the experience of the different Assurance Companies, for the benefit of one and all.

“The frequent interchange of opinions, in meetings like the present, cannot fail to allay all petty jealousy of rivalry, and give birth to that praiseworthy emulation so beneficial in some other professions by which individual knowledge and experience is accumulated for the common good; and therefore I cannot help thinking, that however we may at present regret the imperfect knowledge we possess of the true value of the risks undertaken by Life Offices, we cannot but blame ourselves if that ignorance is permitted to continue much longer. Each in his own sphere can do much to urge the necessity of instituting these inquiries, and the force of such appeals must ultimately prevail. It should however not be lost sight of, that the rapid extension of the practice of Life Assurance of late years will render the data derived from the past experience of Life Offices yearly less applicable to their future operations. Hitherto, Life Assurance has to a great extent been confined to the comparatively wealthy; but now the practice seems to extend to the less wealthy and humbler classes, and is in fact almost universally recognised by the industrious workmen of the country in connection with Friendly Societies. As I have before stated here, it seems to me that there is little chance of a future generation of the gigantic Corporations, boasting of their millions of invested capital, and revenues exceeding those of some of the states of Europe, springing up. It is more likely that an intermediate class of Companies will be called into existence, holding a position between that of the great corporate bodies established in the last and early in the present century, and the humble Friendly Society, with which the working classes are familiar. If this supposition be well founded, or if it be admitted that Life Assurance will rapidly extend itself among all classes of the people, it is evident that the

rate of mortality among the assuring classes must gradually approximate to that of the country generally. No principle in statistics is better established than the widely-differing rates of mortality among different classes and ranks of society; and the more assurances are confined to individual classes, the more peculiar ought we to expect the rate of mortality to be: but as the practice of assuring ramifies itself among all classes, so also will the rate of mortality gradually assimilate to that of the country at large. There is, consequently, reason to conclude that, with the extension of Life Assurance, the rate of mortality of life will become more favourable. In support of this statement there is the most abundant evidence. The past experience of Life Offices, as far as it can be made available in the solution of such a question, shows that the rate of mortality among the assuring classes, which chiefly belong to the middle and upper walks of life, is greater than that of the population at large. The corrected experience of the Government male annuitants also shows a higher rate of mortality; and taking the results of observations on the Peerage as given by Mr. Edmonds and Dr. Guy, the rate of mortality among the highest ranks of society is very much greater than that of the whole population of this country. It will likewise, I have no doubt, be admitted that among the intemperate, the destitute and debased, the rate of mortality must also exceed the average for the people at large. Hence, since all these groups experience a rate of mortality above the average of the whole population, there must be somewhere among the people a class which is subject to less than the average mortality. That class, it is evident from the exhaustive enumeration of the above groups, must be the industrious provident workmen of the country, who do not fall within any of the sections of the people spoken of.

“But there is, besides, direct evidence to show that the prudential portion of the working classes are really subject to a less rate of mortality. Early in this century, considerable attention was given to the nature of Friendly Societies or Sickness Clubs; and since the year 1824, the question of the sickness and mortality to which the members are subject has also engaged public attention: while, since 1835, some evidence of the rate of mortality prevailing among those Societies has been before the country; and for the last five or six years the most conclusive evidence, established on a large body of facts, showing that the duration of life among the members of Friendly Societies generally is much greater than that of the country at large, or the select classes dealing with Assurance Companies. Additional evidence is also being brought under attention in support of the same conclusion. This immunity from disease among the humble and industrious workmen of the country, whose prudential habits are sufficiently strong to maintain them members of these clubs, is only what *à priori* might be expected. The fact of continuing a member of such a society presupposes great regularity of habits; otherwise difficulties in circumstances and distress would ensue, and, from inability to continue his subscription, non-membership follow. Hence, such a member must be regarded as the type of industry, frugality, regularity of habits, and simplicity of life. The health of the body must co-exist with uniform physical exercise. The member's avocations enjoin on him a diurnal repetition of the different functions of the body, in a manner not required of the pampered, the indolent, the intemperate, and the debased. He has therefore his legitimate reward, in the enjoyment of a long, a useful, and let us hope a happy and blessed life. If the operations of Life Assurance Companies should ever extend so as to embrace the classes now comprising the Friendly Societies, it is evident that the rate of mortality must diminish rather than increase; but should the practice of assuring lives stop short of that, it is still obvious that the same principle will hold good, although the improvement in health may not increase to the same extent.

“Having dwelt at so much length on the nature and extent of the data now chiefly in use for the purpose of Life Assurance, I shall be unable to enter into detail on the immense field in vital statistics which still remains uncultivated. One of the most obvious, which still remains untouched so far as the middle and wealthier classes are concerned, is the mortality of children. Private monographs I know exist on this question, but are not available for public use. Connected with the mortality of children the following are questions of urgent

importance to the Actuary not only in the more ordinary exercise of his functions, but also in the special cases on which his advice is frequently sought by the public:—The influence of age at marriage on the fruitfulness of the marriage. The influence of age at marriage on the mortality of the children born therefrom. The influence of age at marriage on the sex of the issue, and also on the relative mortality of the first, second, and third born, as well as each subsequent birth in consecutive order. The probability of marriage in different ranks of life for each age and sex is also important to be determined. But one of the questions in which the Actuary should be most interested, and for which he is but indifferently prepared at present, is that of the tests which should be applied to members seeking admission into an Assurance Society. The very mention of this subject opens up to our view a most fertile field of inquiry yet remaining untouched. Among more obvious questions may be mentioned the power of diseases, usually called hereditary, in developing themselves in succeeding generations of families in which they have once appeared. The relation of mortality in general in one generation to that in the next generation. Relation of the mortality in one section of a family to that of another or surviving section of a family. The probability of the development of infantile and other non-recurrent diseases in relation to age. The influence of infantile diseases on the mortality of survivors to mature life. The practical importance of the preceding questions must be evident to those of even the most limited experience. At present nothing but arbitrary tests exist, and consequently all the absurdities of caprice, instability, and prejudice interpose in the place which should be occupied by the science, judgment, and disciplined skill of the Actuary. To obtain this amount of new data will involve great expense, much labour and patience: still abundant materials exist to afford the information required, and all that is needed is a resolute attempt to conquer the difficulties, but it is too much to expect that private individuals can afford to go to the expense of collecting materials for the purpose of enriching public Companies already plethoric in wealth, and whose speculations have been notoriously profitable in the history of trading enterprise. The proper parties to bear the expense are the Companies themselves, and if the members now assembled would take the matter earnestly up, there is no doubt their united efforts would have the desired effect. A few thousands out of the millions possessed by the Assurance Companies devoted to the acquisition of accurate data on the subjects discussed, would form one of the wisest and best investments which any financier could devise, and place their Actuaries in the proper position of having to deal with facts and established principles instead of the dogmas of prejudice and ignorance. I cannot conclude these abrupt and extemporaneous remarks without stating my conviction, that one of the best means of improving our knowledge from the best sources, is by the cultivation of a high tone of honest and liberal manly feeling among ourselves, and the exercise of kindly offices to each other; by which the free communication of individual experience and knowledge will be made for the benefit of all, the promotion of our common interests, and the elevation of our status among other enlightened and learned professions."

Dr. Friedländer considered that though information on the subject of the data applicable to Assurance in various branches might be obtained in other countries, it would not be useful to employ it in this, so different were the results arising from habits of life, from circumstances of social condition, and from locality. As to Mr. Neison's question, what works had been published in Germany to throw light on these topics, he believed that Mr. Hoffman, of Berlin, would be found a safe guide to the Vital Statistics of Prussia. He was himself rather a sceptic on statistical facts, considering the ill-use which was frequently made of them; but he was disposed to consider Hoffman would be as trustworthy as any. Dieterici, his successor in the Statistical Bureau, at Berlin, was also highly valued on the Continent. In general theories the work of Moser was unsurpassed. The *Lebensdauer* of Casper might be in some respects more doubtful, but he gives a succinct and valuable account of the early writers, Dr. Halley and others. Dr. Friedländer then entered into an explanation of some of the novel inquiries which Casper had commenced; and

instanced amongst others his conclusions, that the more prolific the marriages in a country were, the greater was the rate of mortality prevailing amongst the children of those marriages; that in cases where the wife was older than the husband, the marriages were less prolific; that in the mature marriage ages, such as where the wife was about 20 years of age and the husband about 30, the greatest number of children were born to each marriage, and that the average life of the children was longer. He apologised for any accidental errors in these statements, they being drawn from memory, but would refer to these works, as containing much curious information. He stated also that the work of Bernouilli, in Switzerland, was held of considerable value.

The Chairman having invited further observations, and waited a short time, said:—"Gentlemen, as our time is so valuable, and the second question is of even more general interest than the first, I will, with your permission, request your Vice-President, Mr. Thomson, who has given much attention to the subject, to favour us by introducing it. It is as follows:—

‘What is the mean rate of interest prevailing, and likely to prevail hereafter, in this Country and on the Continent?’”

Mr. Thomson observed: That he considered the rate of interest at this time of more importance even than that of mortality. A small difference in the former would be found to be of greater consequence in a period of years by the accumulation at compound interest. He had taken considerable pains to gather some observations on the subject, to which his attention was first drawn by an investigation which he had been called upon to make into the Scottish Ministers’ Widows’ Fund. He had formed the results into a diagram, of which he was happy to lay on the table several copies for the use of the Meeting. In this would be found the variations of interest amongst the Banks in Scotland, and also a general summary of those great public events in each year which might be supposed to exercise an influence over the value of capital. It would be noticed that as a general rule the Banks took the lead in every change, and that landed security followed the Banks, rather than the Public Funds. In Scotland they had regular meetings of persons who were interested in fixing the value of money, composed of the principal solicitors and others engaged in finding means for large investments of money; and thus a similar rate obtained at different periods over the whole country. It might be expected that he should draw some conclusions from the past as to what the future rate might be. The subject might be difficult, but his own impression was that $3\frac{1}{2}$ per cent. would be too high a rate to calculate upon in future; that 3 per cent. would be the best and safest; and that, from all his previous inquiries, he believed that the rate of interest would gradually diminish for many years to come.

Mr. W. S. Jones, Trustee and Director of the Equitable Life Assurance Society, said: That one of the questions before the meeting was, “What rate of interest of money would be likely to prevail hereafter in this country and on the continent?” He had not paid sufficient attention to this subject to be able to give a decided opinion; but as the history of the great Society with which he was connected might throw some light on it, he begged to make a few observations respecting the interest on their mortgages. Some years ago, in every mortgage deed the rate of 5 per cent. was required; but the Society having been called upon by external circumstances to reduce the rate, his attention had been called to the facts. At that time many thousand pounds of the interest remained unpaid long after the time it was due; and as in such societies the regular payment of interest was of the utmost importance to secure the full increase of their investments, a scale was drawn up, by which a certain reduction was allowed if the amount due was paid within 60 days. This brought in all the outstanding arrears,—only one stood out. After another change of a similar kind, a regulation was framed by which the interest paid by the mortgagors was regulated by a scale which varied according to the different prices of the public funds, but the average of which kept up the rate of interest about $\frac{1}{4}$ more than that which could be obtained in Government Stock. This system continued for many years, and enabled them not merely to secure

the very best mortgages, but to obtain the interest with a degree of regularity, which the Actuaries would know must be of great importance in the operation of compound interest. An alteration had since been made, and money was now only advanced at 4 per cent. for 5 years certain; after which it fell within the regulations previously described. The money was advanced nominally at 5 per cent., but the mortgagors trusted to the honourable fulfilment of the conditions, and the Society had no difficulty in investing all they required. They had now £4,200,000 on mortgage of purely landed property, with a margin of two, and in some cases three times the market value for their security. The question of what the future rate of interest might be, was a more difficult one. He would leave it for those present who had made the subject their study.

Mr. Pinckard said: That with respect to the rate of interest likely to prevail hereafter, he considered that it is more likely to *diminish*, than to be equal to or greater than has hitherto prevailed. Peace in Europe, which appears likely now to continue, must have that tendency; the importation of unusually large quantities of gold will have the same effect. Free trade, and the increased facilities and rapidity of communication, will increase wealth, and thereby make money more abundant. The increase of trade in Australia has had the effect of lowering the rate of interest. He was acquainted with a Company that could a few years since easily obtain, on the *best security*, in that colony ten or twelve per cent.; that high rate can no longer be obtained, and the rate of interest there is gradually becoming lower. Then as to the effect of the rapidity of communication, it has enabled persons engaged in trade, particularly the retail trades, to carry them on with smaller stocks, and consequently with less capital. This of course lets loose a certain amount, which must also tend to make money more plentiful, and thereby reduce its value. Consols having nearly reached par, he had recently heard, that in the event of the Funds going *above par*, Government would quickly make an attempt to reduce the interest: this again bears in the same direction of diminishing the rate of interest for the future. As respects the rate which an Assurance Office should employ, either in the construction of its tables, or in its valuations, he was clearly and strongly of opinion that $3\frac{1}{2}$ per cent. is the highest rate that can with any degree of prudence be used. He considered that if an Office could realize on the sums actually invested 4, or at most $4\frac{1}{2}$ per cent., it was as much as any Society with a large capital to manage could do with safety. The following considerations prove that a serious drawback must occur in every Office. First, there is a large sum always in the hands of the agents and bankers which pays no interest. Secondly, there is always some interest in arrear, which from its not being paid at the time it was due, cannot be invested so as to carry on the compound interest properly. Thirdly, there are certain law expenses to get in the interest due, besides the loss of capital, which sometimes occurs by a bad investment. All these contingencies, if properly looked into, must have the effect of so reducing the rate as to leave but little if anything above 3 per cent. for actual accumulation. He must therefore come to the conclusion that it is imprudent, if not unsafe, to employ a higher rate than 3 per cent. at the general valuations, more particularly as such valuations should have reference as to what will be safe for the next thirty or forty years to come.

Mr. Lodge, in reply to Mr. Pinckard, remarked: That the small sums set free by the growing facilities of intercommunication were as nothing in comparison with the immense amount of capital likely to be absorbed by trade with new regions; that balances, for instance, now no longer required to be held by branch firms at home, would be employed in distant commercial enterprises; and that the development of the resources of America would alone give profitable employment for all the surplus capital of Europe for years to come. Hence he concluded that the tendency of affairs was to an equalization of interest throughout the world, rather than to a fall in the rate of interest in England.

M. Santhagens, of Amsterdam, observed: "The second question is, 'What is the mean rate of interest prevailing, or likely to prevail hereafter, in this

country and on the Continent?' The mean rate of interest prevailing in my country is 4 per cent., this rate being the basis whereupon the Government of the Netherlands admits the Table of Annuities. But the same Government admits another basis for those Companies established in Europe, with branches in the Colonies, where the mean rate of interest is calculated at 6 per cent. The Company under my direction at Amsterdam, who prepared their tables according to that rate of interest, were authorized by the Government after a statement from the Minister for the Colonies, that the mean rate of interest in Java was 6 per cent. As for the future, the mean rate of interest is likely to decrease. I believe the remedy against that evil will be to establish a general office in the Colonies, to profit by the higher rate of interest in those countries, or to reassure the annuities which cannot be granted without some such measure. Those Companies who have branches in the Colonies may thus be able to lay out the capital sums paid for the purchase of annuities at a higher rate of interest than in Europe."

Mr. Hodge considered that the difference perceptible between various rates of interest at the same period, arose from the difference in the value of the security in which it was invested. A part of the rate might be considered real interest, the remainder as implying the degree of doubt whether the capital would be returned. In former times interest was remarkably high. It was not till the period of Henry VIII., that it was fixed at 10 per cent., and of James I., at 8 per cent. Money-lenders were looked upon with aversion and contempt. Usury was not as it now is considered, merely the charging of excessive rates of interest, but the taking any interest at all. Even our immortal bard had made the subject of one of his plays the odious character in which a money-lender was considered. Such opprobrium must be paid for, and this would in some degree account for the high rates formerly prevailing. In Queen Anne's time, the legal rate was finally settled at 5 per cent. Mr. Babbage gives an interesting comparison of the average rates prevailing during 48 years of war, and 44 years of peace, the former being 4 per cent., and the latter 3½ per cent. A great portion of the periods in which the latter rate prevailed was during the administration of Sir Robert Walpole. Notwithstanding, therefore, the enormous increase of population, no very material increase had taken place in the rates of interest. He considered that it might appear strange that the interests on landed security should be higher than in the funds, considering the numberless circumstances which might affect the tenure of the latter. He further remarked that the interest of money depends not only on capital, but on the demand for it. It may vary from so many causes, that it would not be safe for assurers to take the highest rate, but rather the lowest they would be likely to obtain. He called to mind that, as regards the United States, Dr. Franklin, in one of his admirable Essays, reminds his readers that a payment of a groat a day may obtain £100. to assist him in business, which is equal to about 6 per cent. interest. Capital must then have been comparatively scarce. It was nearly at the same rate now. Miss Martineau says that at Mobile, the prevailing rate was recently 8 per cent. At Massachusetts he believed it was 6 per cent. America, therefore, though she had increased so rapidly in wealth and capital, still required more. Increase of capital does not necessarily imply increase in the rate of interest.

The Chairman, finding that it was not possible to continue the discussion on this topic further, and understanding that some gentlemen from abroad had one or two subjects of interest to produce to the meeting, invited their observations on the questions.

M. Flemmick, of Antwerp, rose and said :—"Gentlemen, aware of the great advantages connected with a general system of communication to promote and facilitate a thorough knowledge of Assurance business, we feel ourselves thankfully bound to the gentlemen who are managers of the Institute of Actuaries, for their noble efforts, and for their calling together the present assembly of persons deeply interested in all questions relative to assurances in their different branches. Whilst Life Assurances are carried on with rates previously prepared, and the principles of which are recognised, the valuation of Marine and Fire Assurances must depend on circumstances and considera-

tions liable to change at every moment. It may, therefore, be desirable, that in regard to them, every information should be obtained about all matters which may influence the consideration of such risks, and which may protect and benefit and add to the security of all parties concerned. With the desire of enlarging the means of approaching to such results, and being most specially interested in the line of Marine Assurances, my friend, M. Santhagens, here present, representing the underwriters at Amsterdam, has joined me in my similar capacity as representative of the Marine Assurance Companies at Antwerp, to suggest for your consideration the following proposal:—‘That a Committee of Managers of the London Marine Assurance Companies be constituted, for the purpose of arranging a correspondence with the establishments abroad, or their representatives, with the object—1. Of putting a check on the constant occurrence of duplicate assurances. 2. Of devising the means of making public the rates of premium to be regulated by the special stipulations of the policies in different countries. 3. Of treating the question, so as to arrive at a general rule for all nations, in what manner war-risks may be considered and regulated.’ ”

M. Flemmick then handed in an important paper, in French, on the subject to which such a Committee might usefully devote their attention,—on the abuses at present prevailing in Maritime Assurances, and the remedies which might be suggested; but which could only be carried out by the cordial co-operation of all parties concerned. (This paper will be found in Appendix A.)

M. Lazarus, of Hamburg, Agent-General of the Assicurazioni Generali, in Trieste, then desired, in the following statement, to draw the attention of the meeting to the important question of assurances by the State:—

“Gentlemen,—Although the Institute of Actuaries has hitherto examined principally the questions alluding to Life Assurance, I hope to be excused for bringing forward an object of general interest for insurers, and I solicit the favour of your considering its importance. I shall be short. It will be doubtless known to the Institute of Actuaries that on the Continent the plan to make Assurance an affair of Government has often been tried; the Government undertaking to pay all claims and raising the necessary premiums in form of a tax. This plan was very lately proposed in France and Belgium. It will be superfluous to add one word about the dangers to which it gives rise. It would be equally perilous for the State, for the assured, and for the office. I think nobody here will venture to deny that such would be the result. I do not intend to discuss even the question how far the law, enforced in some of the German States, that buildings must be insured against fire in what is called ‘*Stats-brand-cassen*,’ in which the Insurance is granted by Government, and an *equal* premium raised for all risks, might prove to be a bad one. I have only to state that very lately in the Duchies of Parma and Modena, insurance against hail and fire risks has been taken up by the Government, and that the Companies have been forced to withdraw from these States, as they were from those of the Pope a few years ago, although they had many policies in force. It is possible that this example will find imitators who may desire thereby to increase the revenues of the Government; and I think all Insurance offices, and all who take an interest in the prosperity of the assured, and of the offices, should unite in a vigorous opposition to these schemes. Where could I better make this proposal, than before this Institute of Actuaries, before those gentlemen who are the most competent judges of the case? I add no more to recommend my proposal. I hope it will find no objectors.”

The Hon. Secretary laid before the meeting some copies of a paper just received from Herr Masius, of Leipzig, prepared and printed expressly for this meeting, containing a summary of the present condition of the Assurance interests in Germany, in all branches of the business—Maritime, Life, Reversions, and Annuities, Fire, and the Transport of Goods, for which the thanks of the meeting were especially offered to this distinguished writer. (A translation of this paper will be found in Appendix B.)

A paper was also presented by Mr. Samuel Brown, one of the Honorary Secretaries of the Institute, on the various collections of data in the different

branches of Assurance (Appendix C.), and a general summary of the Assurance business of Great Britain and the Continent. (Appendix D.)

From the interesting character of the discussion, it was evident that the meeting might have been continued for a much longer period, but the proceedings were obliged to be terminated, in order to allow opportunity for those who were present to arrive at Richmond in time for the banquet at 6 o'clock.

THE DINNER AT RICHMOND.

At the hour just named, the members of the Institute and their distinguished foreign and other visitors sat down to a dinner at the Castle Hotel, Richmond. The Right Hon. Lord Overstone, President of the Statistical Society, in the chair.

The foreign guests were, M. Aulit, Antwerp; M. Breton; M. Claparède, Geneva; M. Delahaye, Antwerp; M. Dubroca, Paris; M. Flemmick, Antwerp; Dr. Friedländer, St. Petersburg; M. Gaultier, Lyons; Professor Gill, New York; M. Gueyraud, Marseilles; M. Guerry, Paris; M. Joliat, Paris; Mr. Kennedy, United States; M. le Cap^e Lafond, Paris; M. Kohler; M. Lazarus, Antwerp; M. Löwengard, Frankfort; M. Maas, Paris; M. Santhagens, Amsterdam; Herr Varentrapp, Aix-la-Chapelle.

Among the English guests invited by the Institute, were Colonel Sykes, Dr. Babington, Dr. Guy, Dr. Southwood Smith, Mr. Babbage, Mr. Chadwick, Mr. Childers, M.P., Mr. Clayton, Mr. Davies, Mr. Delane, Mr. Fletcher, Mr. Hendriks, Mr. Farr, Mr. Heywood, M.P., Mr. W. S. Jones, Mr. Lumley, Mr. Moriarty, Mr. Oswald, and Mr. Tidd Pratt.

After the usual loyal toasts, which were introduced by the Chairman with peculiar felicity and propriety, and were received with great enthusiasm by the assembled guests,

The Chairman proceeded to propose the toast of the evening. He said, in undertaking that task he could not but feel painfully embarrassed by the consciousness of his own incompetence to discharge the duty assigned to him. Fortunately, however, he was not responsible for the choice that had been made of the individual who presided over the meeting. With him rested the simple duty of doing the best he could to promote the pleasure of the meeting, and to forward the purpose for which it was assembled. In endeavouring to discharge that duty they must not expect from him any lengthened or eloquent address. He had no great public principle to submit to them for which it would be his duty to excite their enthusiasm; he had no appeal to make to their tender feelings, with the view of exciting their sympathy for the sufferings of humanity, or of calling forth their generous exertions for its relief. His simple task was to propose as a toast the prosperity of an Institution which he seriously believed was calculated to render good service to society, and which was supported by the exertions of a body of individuals who applied their time and their high intelligence to what he could not but consider was the appropriate, and he would even go so far as to say, was the appointed duty and mission of man upon earth. They might ask what he meant by that expression. His reply was simple and distinct. They, the body of Actuaries, as he understood it, were engaged in endeavouring to investigate the varied and complicated phenomena of the active life which surrounded them, and especially so far as they had reference to the casualties, often mis-called accidents, which affected them in their persons and properties; and their object was, out of the surrounding and apparent confusion, to deduce, if possible, something like order and regularity, and from their views of that order and regularity to arrive at some knowledge of the laws by which that apparent confusion was regulated, and to found regulations and institutions which should contribute to the safety of society, to the progress of the best interests of mankind, and to the advancement of civilization. Such, as he understood, when comprehensively worked out, and truly estimated, was the nature of the exertions made by the body of Actuaries, and the objects to which they were directed; and he would ask them seriously to consider what but that was the object of all knowledge? What but that was the end and

aim of all those sciences which man cultivated at the cost of so much painful labour and thought, and for their effectual progress in which mankind in all ages of the world had received so large a share of approbation? They were all directed to the very same purpose—to the eliminating of order and regularity out of the confusion which apparently surrounded them, to the ascertaining the laws by which the events and the phenomena around them were governed, for the purpose of deriving from an accurate knowledge of those laws the means of governing those events and phenomena, of turning them to the use of man, and of rendering them subservient to his progressive improvement. In that respect the contemplation of the vast and varied phenomena of the universe around them was something like looking at those invisible writings with which they were occasionally amused. At the first view all was blank, but when the proper means and appliances were resorted to, they soon began to see the first indications of lines and traces, and after a patient investigation they began to find that what at first sight presented only a blank, was marked with some deep lesson of wisdom, or with some kindly message of love. So it was with the phenomena of nature. Take them in what sense they would, look at them with a superficial and with a hasty and uninstructed eye, and they conveyed no idea of benefit to man; but look at them more carefully and attentively, and they would soon find that if men would undergo the painful operation of investigating them with the faculties that had been given to them, they were full of instruction, of utility, and of benevolence. Look at the crust of the globe on which they trod. Could anything at first sight be more confused, disorderly, or irregular? *Rudis indigestaque moles*. Yet they knew, by a little patient study and investigation, that even there was order and regularity. They had discovered that the strata of the earth had been laid layer upon layer in the succession of ages; and when they had once been enabled to understand their order, they had ascertained the means of guarding against many fatal errors. Thus they found out the science of geology, and all the advantages and blessings which have been derived from it. Again, what could be more irregular and disheartening than the aspect of the uncultivated desert? and yet, by investigating the laws by which the productive domain of nature was regulated, they had been enabled to make it subservient to their very best interests, and that which before, when uncultivated, produced nothing, was made to pour forth immeasurable stores destined for the support, the luxury, and the comfort of man. Turn their eyes again from the earth below to the skies above. Look at the star-spangled vault of heaven. Anything at first view could not be less intelligible, or less instructive to man. Yet they knew what had been the result of their endeavours to ascertain the laws by which its system was regulated. Thus they had been enabled to discover the laws of astronomy, and from that discovery they knew what multiplied advantages had accrued. They were enabled to track their course on the pathless ocean, and after wandering for months and years upon its bosom, without sight of land, to direct their steps to some peaceful haven. Look again at the storms which convulsed the very bottom of the deep, or the winds and tempests that ruffled and agitated its surface. What to an ordinary observer could appear more unmanageable? Yet they knew that they had brought even them into their subjection; and thus the ocean currents were made the means of wafting their merchandise to distant climes—yea, even the law of storms itself had become the subject of the sternest investigation, and it was not difficult to believe that the time would come when the mariner would be able to steer his course along the very outskirts of the storm. Those were instances of their endeavours to elicit order and regularity from the apparent confusion in the material world. Turn again to the intellectual world. What could be more irregular than its manifestations? What could be more apparently the result of accident that could never be understood? And yet these, properly studied, might still be reduced to order. The laws by which they were governed might be ascertained; for what did they mean by prudence, by judgment, by wisdom, but the result of man having studied the apparent irregularities and the wild and frantic actions of his fellow-men, and of his having arrived at a knowledge of the laws by which they were regulated, and by the possession of that know-

ledge guiding himself though their tempestuous manifestations? The value of the study of the laws which regulated all the human phenomena that surrounded them, with the view of ascertaining the course they were likely to take, and the results that were likely to ensue from ascertaining those laws, had been expressed by a great English writer, in language so beautiful that, with their permission, he would venture to read it:—"Of law there can be a no less analogy than that her seat is the bosom of God, her voice the harmony of order. All things in heaven and earth do her homage. The very least is feeling her care, the very greatest is not exempted from her operation. Both angels and men, and creatures of what condition soever, each in a different sort and manner, yet all with a uniform consent, admire her as the mother of their peace and joy."

He had ventured to make those observations because he thought they bore directly on the subject in relation to which they were assembled that evening. They, the Actuaries of this country, were pursuing objects and purposes, and proceeding on principles precisely analogous to those of the votaries of science of every character. In that great sphere of human interests with which they were concerned, they were wandering among elements which for ages appeared characterized by interminable confusion; they were eliciting the order which really prevailed among them, and endeavouring to ascertain the laws by which they were regulated: and in proportion as they ascertained correctly those laws, they were obtaining the means by which they would prepare for society a measure of insight into those operations in which her highest interests were deeply concerned. They were enabling her to take a large portion of human action out of the category of accident, and to reduce to a certainty what had been looked on as a lottery or a game of chance; and they were enabling man, in his domestic affairs, and in the affairs which nearly concerned all his private happiness and morality, to steer a course as clear, as certain, and as well ascertained, amid the casualties of life, as the mariner of whom he had already spoken did amid the casualties of the ocean. And could there be an object more worthy of all the intellectual faculties of man, when measured in its direct bearing on all the best interests of society, or more entitled to their respect? It was on those grounds that he (the Chairman) felt deeply honoured at having been asked to preside on that occasion. He did feel that the pursuits of them, the body of Actuaries, were those in which society at large was deeply interested. The whole science of probabilities—for a science, in the justest sense of the word, it was—was one of the advanced marks of a very advanced and an advancing period of civilization; and so long as they took an interest in such investigations, and in those results which should be obtained from them, they would bring benefit to themselves, and happiness and peace to the world. The noble lord concluded by proposing "The Institute of Actuaries."

The toast was drunk with enthusiasm.

The Chairman then proposed "The Assurance Interests of the world." He said an increase of insurance in all its forms was one of the most certain indications of an advanced and a very advancing state of civilization. In that respect, other countries in the world were pressing most closely on our heels, and, in many respects, were far in advance of us. It was one of the peculiar characteristics of that peaceful rivalry, that they might look at the comparative success of their rivals, without wishing to detract from the benefits they enjoyed. With regard to France, for example, he was happy to say that the extent of insurances against fire in that country exceeded those of this country by 50 per cent. Most sincerely did he hope that that large amount of insurances, indicating the existence of circumspection, prudence, and some of the greatest virtues in society, might rapidly increase in that country to an extent to which he would place no limits, and that the same glorious symptoms of increasing morality might advance in this country at the same pace. Insurance was also largely extended and extending through Germany, in the United States, and in every country that pretended to be advancing in everything of which mankind ought to be proud.

The toast was drunk with acclamation.

M. Maas, in returning thanks on behalf of the Insurance Companies of France, said, a few years ago, men engaged in the same pursuits were envious of each other, and endeavoured to conceal all that could afford any improvement to their competitors. The English people, moved by a nobler spirit, did not fear to exhibit to all mankind the treasures of their industry, so that any one might profit by their example, and derive advantage from imitating them. The same feeling induced the Institute of Actuaries to convene the Actuaries of all nations on the native ground of assurance, to participate in the discoveries of their science, and the results of their experience. Many, many thanks to them for that good idea. He was happy to be able to express to them his gratitude, and regretted only that he could not do it in better language. He would add his earnest hope that there might be a perpetual union of science and industry between all civilized nations, and particularly between France and England.

Herr Varrentrapp, as the representative of a German office, and Dr. Friedländer, Professor of Mathematics at St. Petersburg, also returned thanks.

Mr. Kennedy, on behalf of the United States, said that he represented in that country a youthful nation, hardly yet out of the leading strings of its parent, to whom it owed all honour and respect. They were hardly yet out of their swaddling clothes, and perhaps, like other children, they were rather fond of boasting, even in the presence of their parent; but he asked the company to attribute their faults to their youth, and to remember that their extraordinary natural growth, brought about by circumstances which neither they nor any other human power could control, had increased them in numbers and prosperity beyond anything that history could parallel. There was nothing peculiarly great, or glorious, or honourable, in the causes producing this state of affairs. Their greatest efforts had been directed to know themselves, and they were the first nation that had ever made the numbering of the people at the outset a part of their constitutional and fundamental laws. They had found that principle of so much value, that they had branched into co-relative subjects of inquiry. As early as 1810, the statistics of their agriculture and of their manufactures had been taken, it being considered that, next to knowing the numbers of the people, it was necessary to know their various conditions, in order that legislation might be carried on with enlightened views, and the progress of the country accurately ascertained. From that time till the present they had kept these objects in view, and in their last census, in which he had the honour to participate as superintendent, the age, sex, colour, condition, birthplace, trade, degree of education, of every being, white, black, free or slave, were given. The details of their agriculture, manufactures, and commerce were collected, and presented results deeply interesting to a society like this. With reference to the statistics of longevity, they had viewed with great interest the progress which the Actuaries of England had made, and instead of retarding them in their progress, they were willing to help them along and to proceed at the same rate themselves, if not a little faster. For himself, he had come far to receive information, and from "Farr" he had received it.

Mr. Neison then rose, and proposed the health of the noble Chairman in the following words:—

"My Lord,—I feel that an apology is due to the present company for my inability to do justice to the toast with which I am intrusted, and I therefore wish the duty had devolved on some one more competent than myself. The Members of the Institute of Actuaries have certainly reason to be proud of the distinguished honour conferred upon them by your Lordship presiding at this meeting. The fact of a nobleman so distinguished throughout Europe as your Lordship in economic science, and in the principles which regulate the monetary affairs of life, lending his countenance and support to the objects and purposes of the Institute, cannot fail to raise it in the estimation of society, and stimulate the Members to increased efforts in the study and advancement of the difficult and complicated scientific and practical questions which it is the purpose of the Society to promote. Your Lordship has so happily and so accurately described the duties and functions of the Actuary, that

little more is necessary to be said on that subject ; but I hope I may be excused if I trespass on your attention in taking advantage of the present occasion to remark, that in the opinion of many the office of the Actuary is confined to the precincts of the Life Office. This would be placing a narrow boundary to his functions ; for exterior to the affairs of Assurance Companies, the public has long demanded his services in the regulation of some of the most important monetary transactions. I trust it is not too much to say that an extension of the same principles which have been applied so beneficially to life contingencies, may reasonably be expected before long to be made to bear on the management of even our national system of finance. The business of some of the gigantic corporations with which Actuaries are connected is of equal magnitude with that of some European states, but it is in many respects much more complicated, requiring considerable forethought, judgment, and experience ; and it may be fairly said that if in our national finances equal care were taken to systematize the management, and to evoke principles and laws from past experience to be applied in aid and guidance of the future, that much of the difficulty connected with the budget and taxation of the country would be avoided, and perhaps even some of its periodical financial calamities occasionally averted, or, at all events, their severity lessened. Where so many and diversified moral and physical causes prevail on the financial resources of the kingdom, it is not too much to say that there is at the present time as fair a prospect of deducing laws and principles, indicative of the limitations within which such monetary changes and fluctuations are confined, as there appeared to be some years ago to determine what are now recognized as important laws in the development of crime,—one of the most difficult of the moral class of actions to reduce to statistical tests ; or as there was to determine the probable duration of life,—being one of the most complicated physical problems brought within the dominion of statistics. If this supposition be well founded, the functions of the Actuary may before the lapse of many years be more importantly recognized in connection with national finance. I do hope, therefore, from the affinity which the proper investigation of such questions must necessarily have to the inquiries which are professionally made by the Actuary, that the Institute may yet, among the other advantages which it is calculated to confer, be also the means of throwing considerable light on the economic principles which should govern our financial system. We trust, my Lord, that having, at this our first public meeting, been so fortunate as to receive your Lordship's approval and sanction, we shall experience as brilliant a course of prosperity as a kindred institution, the Statistical Society, in the formation of which your Lordship took an important part. It is therefore now my duty to express to this meeting the sense of the deep obligation and gratitude felt by every one of the Members of the Institute of Actuaries, for your Lordship's kindness in presiding at the present meeting, and thereby lending your high authority to the promotion of those branches of knowledge with which their professional labours are identified. Gentlemen, I beg to propose the health of our noble Chairman, Lord Overstone."

The toast having been enthusiastically responded to, his Lordship acknowledged the compliment with evident sincerity of feeling.

Mr. Peter Hardy, of the London Assurance Corporation, said :—

"My Lord and Gentlemen,—The toast which I have the honour to propose is one which, I am convinced, will be received with every kindness : 'Success to the Assurance Companies of Scotland !' My Lord, I am particularly happy in being permitted to propose this toast, because it gives me the opportunity of acknowledging, as an individual member of the community of English Actuaries, how very largely we are indebted to the Actuaries of Scotland for the ready and valuable assistance which they afforded us while yet our Institute was in its infancy, and for the steady good faith with which they have adhered to and supported us on every possible occasion. My Lord, you have this evening assured us,—and I, for one, have listened to that assurance with delight,—that you felt a pride in presiding over us on this occasion, because you felt confident that our Institute was not based on selfish motives. My Lord, I can conscientiously assure you, that our Institution was not originated

in any feeling of professional selfishness. Its founders, one of whom I had the honour to be, took no counsel together how to narrow the access to our profession, or how to exclude other competitors than ourselves from a fair share of its honours or its emoluments. It was originated with a higher, and far nobler motive,—in the honest hope of educating the future Actuary, of improving amongst ourselves our present theories, and of enlarging the bounds of that science on which the safety of so many millions sterling depends, and in which the social happiness of so many thousand families is involved; and, my Lord, it is, I firmly believe, because our Institute is truly that which at its outset it professed to be—is truly that which I have endeavoured to describe it, that it has always had the warm encouragement and firm support of our Northern brethren. My Lord, having in mind the purport of this toast, namely, to do honour to the Assurance Companies of Scotland, I should indeed be wanting in common gratitude,—wanting in respect to the other members of my profession, did I resume my seat without making some allusion to an event which is yet fresh in the recollection of us all; which is filled with pleasant memories and recollections of graceful kindness and hospitality. It is exactly twelve months since a large body of the English Actuaries visited the ancient metropolis of Scotland, on the invitation of our Scottish brothers; and I need not tell you that our welcome was all that might have been anticipated from our knowledge of the ancient Scottish character. My Lord, the Assurance Offices of Scotland are this evening represented by two gentlemen, ranking amongst the most eminent of our Actuaries, and certainly two of the most active of the friendly spirits who ministered to us in Scotland. Both are so well known to us, that nothing that I can say can at all add to the esteem in which they are held, both in their professional and in their private characters. Mr. William Thomas Thomson, of the Standard, and Mr. Gilbert Finlay, of the Edinburgh. Mr. Thomson is one of our Vice-Presidents, and a large and valuable contributor to the transactions of the Institute. To Mr. Finlay, those who were of the English deputation to Scotland are particularly and gratefully indebted. Not satisfied with joining in the kindly hospitalities which were shown to us in Edinburgh, he, at much personal inconvenience to himself, accompanied us in our little Highland tour; nor ceased he from his friendly attentions until he saw us fairly started by the train on our return to England. If Mr. Finlay's memory be as good as mine is, he will recall, and I hope with pleasure, the few joyous days which we passed in 'the land of the mountain and the flood;' and I can, in all honesty and truth, promise him that every kindly sentiment which was breathed amongst us 'while at our feet Loch Katrine rolled,' will find its echo here on the winding shores of time-honoured Thames."

Mr. G. F. Finlay briefly and suitably acknowledged the compliment paid to the Scotch Offices.

M. Dubroca proposed "The Assurance Companies of England" in the following words:—

"My Lord et Messieurs,—Permettez moi de vous assurer combien je suis fier d'avoir été appelé à l'honneur de porter au nom des étrangers un toast à la prospérité des Compagnies Anglaises. Il y a longtemps qu'on a dit, Messieurs, qu'il est un langage universel, ne connaissant point de nationalité ni de frontière, c'est le langage du cœur! Que mes paroles prononcées en Français soient l'écho des sentiments qui nous animent quand nous buvons à la prospérité des Compagnies Anglaises. Ce toast, Messieurs, sera recueilli avec d'autant plus d'enthousiasme, par cette assemblée toute entière, que la prospérité des Compagnies d'Assurances se lie étroitement à celle du pays. C'est une source de gloire et de richesse nationale que cette grande institution des Assurances dont je vois autour de moi les plus illustres représentants: soit qu'étendant sa garantie aux milliers de vaisseaux qu'abrite votre pavillon, elle donne au commerce un élan et une sécurité complets pour l'échange de ses produits avec l'Univers; soit qu'en réparant les désastres de l'incendie, elle aide de sa main puissante à l'érection de ces grands établissements industriels qui font l'honneur de l'Angleterre et l'une des gloires de cette exposition qui attire le monde entier autour d'elle; soit enfin dans une autre sphère moins voyante mais plus

étendue encore, qu'elle aille prendre par la main tous les enfans du pays, donnant par les assurances sur la vie, aux riches les moyens de parer aux désastres d'un changement de fortune; aux pauvres les moyens d'arriver à l'aisance et à la richesse par l'épargne; à tous les sentimens et les joies de la famille. N'avais je pas raison, Messieurs, de dire en commençant que la prospérité des Assurances Anglaises est une gloire nationale, gloire que nous célébrons aujourd'hui; donc je suis fier, je le répète, d'être en ce moment l'interprète au nom des étrangers qui, dans la sincérité de leur enthousiasme, s'écrient avec moi du fond du cœur, Honneur aux Assurances Anglaises! Trois fois honneur à l'Angleterre!" (Much cheering.)

Mr. W. S. Jones, in responding to the toast, said, the Equitable Assurance Society, of which he was a Trustee and Director, was the second Company of that kind which was formed in this country. The first Society established itself on principles which were not to be continued for any length of time. It took the same rate of premium for every interval of age, which it was speedily found would not answer. The Equitable Society was established 1762; and, from that time to the present, it had gone on those principles of computation, which all the Actuaries in England now acknowledged to be the best that could be adopted. It was founded especially for the benefit of the families of persons who were assured in it; and since its foundation it had distributed £26,000,000 among the persons who had been connected with the institution, whilst the Society had also accumulated a sum of nearly £9,000,000, which was to be appropriated partly among those persons who were now insured in the office, and partly amongst those who might join it afterwards. He had devoted himself to the interests of Life Assurance for nearly fifty years; and he could say that the great Company with which he was connected had been carried on with perfect honour and propriety. He believed that the Institute of Actuaries had only recently come so prominently before the notice of the world; but he considered that it was a Society of the greatest value, both to the public and its own members. He rejoiced that they were thus devoting themselves to the important subjects of their studies with zeal and energy, and he heartily wished them prosperity and success.

The Chairman next gave "The Statistical Society," which was responded to by Colonel Sykes in the following terms:—

"My Lord and Gentlemen,—I cannot but acknowledge feeling myself much gratified by having my name associated with the Statistical Society and Statistics, a science, without the aid of which legislation is only a series of tentatives, of probabilities, and political experiments. I feel, however, that I owe the compliment you pay me rather to my long zealous co-operation with the Statistical Society, than to any efficient aid I may have rendered to statistics. It would have been my wish, so called upon my legs, to have said something respecting the past and present condition and prospects of statistics, but my physical weakness disables me from any lengthened exertion, and I must, therefore, confine my observations within narrow limits. Although statistics have received only comparatively recent attention in Great Britain, they are not new to other nations. In the library of the Royal Asiatic Society, there are statistics of the Chinese Empire of more than 2000 years' date. David, when he numbered the Jews, must have had some idea of statistics. There are in the library of the Statistical Society of London, seven folio volumes in manuscript of the statistics of France in Louis the Fourteenth's time; they have every appearance of being original documents, and were probably brought over from France by some of the employés at the Revocation of the Edict of Nantz. The Spaniards, also, have their *Dictionario Statistico*. England commenced recently, and, considering the character of the nation, it is surprising that statistics should have made not only slow progress, but that occasional discredit is thrown upon the science. The latter may be attributed to more than one cause,—the dishonest use of garbled statistics, or even the honest use of statistics founded upon data not properly verified; in either case the deductions may militate against truth, and prove mischievous. A mere array of figures, supposed to represent facts, and from which normal conditions are drawn, does not constitute legitimate statistics. In the first place, the

length of time over which the facts run may be insufficient to justify normal conditions or laws; and in the next place, the facts themselves may be influenced by social or physical causes, operating for several years consecutively, and then ceasing. There is an illustration of this within my own experience. For four or five successive years, the troops serving in Scinde experienced a sickness and mortality very considerably exceeding that of the troops serving out of the province of Scinde. The facts appeared sufficiently persistent to establish normal conditions, and I got my friend Mr. Neison to calculate the value of life at different ages in Scinde, as compared with the value of that of troops elsewhere. He was kind enough to do so; and no actuary could have safely ventured to insure life in Scinde at the same premium as lives out of Scinde. Nevertheless, local circumstances produced the supposed normal conditions. The troops for those four or five years had lived in tents, had slept upon the earth, had been harassed by marchings, and the supplies of food were neither so regular nor so good as under ordinary circumstances. For several years past the troops have been cantoned, they have not lived in tents, and have had their comforts about them, and the health of the troops for years past has been as good as the health of the troops out of Scinde. The statistics of the first five years were bad, and did not exhibit normal conditions. [Colonel Sykes gave other instances.] With respect to the misuse of statistics, an instance occurred the other day in a debate in the House of Lords. It was asserted that the export tonnage of Great Britain had fallen off last year, and it was to be attributed to the abolition of the navigation laws. It was quite true that the tonnage had fallen off during a part of the year; but supposing the falling off had continued throughout the year, and for two or three succeeding years, the time would not be sufficient to establish statistical normal conditions, and justify the argument used. But it so happened that one of the opponents in the debate knew that a great ship builder had doubled his tonnage during the last year, and another, who had said he must leave the country in case the navigation laws were abolished, was as busily employed as ever. The argument, therefore, founded upon statistical facts, proved a fallacy. I take a great liberty in making these observations before the Institute of Actuaries, who are not likely to want caution in the selection of the facts they handle; but I have thought it necessary to make them, to account for some of the distrust with which statistics are received, and for the want of that progress which statistics ought to have made in this country. Gentlemen, I thank you in the name of the Statistical Society for the honor you have done the Society, and for coupling my name with it."

Mr. Farr then rose and said:—"I have to propose to you as our next toast, 'The President and Officers of the Institute of Actuaries.' The task is at once agreeable and difficult: agreeable, because I have to express a sentiment which is participated in by us all; and difficult, because I feel how incapable I am of giving the sentiment adequate expression. In reference to what has fallen from my friend, Mr. Kennedy, of the United States,—who has boasted of the achievements of his country, and of the sagacity displayed by her citizens in making the census a part of the fundamental law,—I readily admit that in this, as in other instances, America does not glory without cause. The census of 1850, so ably conceived by the Government, and so satisfactorily superintended by them—as well as the results of that census—merit our admiration, and may well be subjects of gratulation. England, perhaps from pride, rarely indulges in self-praise; but, without any infringement of this rule, she may claim credit for something. This island may fairly boast of having peopled and founded the flourishing States of North America. Other countries may be blest with a happier climate, a more fertile soil, more splendid flowers or fruits, a greater abundance of the precious metals, than this kingdom,—they may have larger armies, and have achieved more victories, or have produced as great or greater men; but no nation of ancient or modern times has ever established such colonies, or instituted anything to be compared to the United States of America, which number now twenty-one millions of people united in the enjoyment of free institutions, and animated by an energy which has carried them from the busy ports of the Atlantic to the shores of

the Pacific,—thus completing the golden circuit of commerce round the world. I see but two dark spots on her banner—slavery and repudiation. But as both attach to particular states, rather than to the United States, they will, we may hope, soon disappear. Another thing for which England may fairly take credit is the having produced the first Life Table,—one of the greatest discoveries of the 17th century; and in its improved form, the basis of all the complicated operations of Life Insurance. As if to show, however, that there was something cosmopolitan in this great system of Insurance, the Life Table—which appeared in the Transactions of the Royal Society of London—was framed by Edmund Halley, from observations made at Breslau in Germany. Another Life Table, constructed on true principles, was made by Deparcieux, a Frenchman. Then we have the Carlisle Table, constructed by an English actuary,—one of the most eminent that has lived. That great man rests from his labours; but his work remains—a monument of skill, industry, accuracy, sound reasoning, liberal candour and truth. I cordially concur in the praise that has been bestowed on the great Insurance Companies; they have given the business a legitimate direction, and a great extent: but I cannot admit that they have done all of which they are capable to advance the science of Insurance, either against life, or fire, or sea risks. The Equitable and the Amicable Offices have set examples which should be followed extensively in all directions. And how or through what agency can this end be so well accomplished as through an institution like the Institute, of which we have assembled to celebrate the anniversary? I do think that the existence of such a body as the Actuaries of Great Britain is another of those things of which we may legitimately boast. I have said that facts, observations, and tables scientifically constructed, are indispensable; but these are not enough. The actuaries in great commercial establishments like our Offices for Insurance should be men of the highest integrity and honour; and these requirements they fulfil. Several of them are known to us all; and we can safely say, that more honourable men do not exist. To cultivate friendly feelings among those engaged in every kind of insurance—to stimulate the industry—to enhance the character of the body of actuaries—as I understand it—is the purpose which the officers of the Institute will keep steadily in view. And this is a great object. I look forward to the day when the profession of actuary will be greatly extended, and when no commercial concern of any extent will be without such an officer. Not only fires, shipwrecks, the accidents of life, may be foreseen and provided for by science, but every kind of commercial misadventure. Then those crises so destructive to the fortunes of the merchant will perhaps be of rarer occurrence; or if the storms and tempests do arise, their laws will be known, and many good ships that would otherwise founder, be brought by scientific hands safely home. I regret that, through the unavoidable absence of Mr. Sheriff Gordon, this toast has had no justice done it; but, looking to the names of the men, their aim as officers of the Institute, and to you, I know that it will receive a hearty response.”

Mr. Jellicoe, in reply, said :—“My Lord and Gentlemen, it is much to be regretted that our excellent President, Mr. Finlaison, could not be here to-day to respond to this toast, more particularly as I have just learned that he will to-day exactly complete no less than forty-six years of service as chief of a great department of the Government of this country. It is some alleviation of our regret, however, to know that the severe illness with which he has been visited has taken a most favourable turn, and that there is now every reason to hope that he will shortly be restored to the performance of those duties which he has on every occasion discharged so much to the satisfaction of us all. To those, my Lord, who have laboured for the formation and success of this Institute, the presence of your Lordship here this day, and of the many eminent persons who surround you, cannot but be looked upon as a very gratifying circumstance; implying, as it does, a recognition of those principles which it has been their main object to establish. To your Lordship we are now indebted for such an exposition of those principles as has long been wanting, and as will no doubt leave an impression not easily effaced; and we have also very much to thank Mr. Farr, for bringing his powerful aid to throw further light

upon them. In such investigations as those with which we have to do, the exclusively scientific man is most likely to err; and the merely practical one is almost sure to mislead. It is the Actuary alone, who, coming between them, and combining the knowledge of both, is by that means enabled to arrive at results calculated to be of real service to his fellow-men. As yet, my Lord, our Institute is but in its infancy; but I trust that what your Lordship and others have said on this occasion alone will convince those who have hitherto doubted of its real utility and importance; and induce them, as I earnestly hope, not to bate one jot of their labour till they have succeeded in raising up a school, in which not only the subjects alluded to this evening, but the cognate ones of taxation, currency, finance, and political economy generally, shall receive their fullest development; and by the dicta of which, as flowing from the purest reason, and the most accurate knowledge, the highest authorities of the realm shall find it their true interest to be guided. I will not detain your Lordship further, than to express my thanks on behalf of the President, Vice-Presidents, and Council; also on behalf of our two Honorary Secretaries, Mr. Robert Tucker and Mr. Samuel Brown, to whose great ability and untiring exertions I may, perhaps, be permitted to say, the Institute is indebted for very much of the success which it has hitherto attained."

Mr. J. Childers, M.P., in an eloquent speech proposed "the Press," and Dr. Guy, "Medical Statistics."

The latter toast was appropriately responded to by Dr. Babington, who bore testimony to the great importance, and indeed the absolute necessity, of an accurate knowledge of medical statistics in order to the successful prosecution of the business of Life Insurance. He observed that the welfare of Insurance Offices, and of the public as connected with them, mainly depended upon the advice which they received from their medical officers, and that the knowledge of these officers was derived from a careful study of health and disease in the individual, and also of the more general laws which regulated disease in the aggregate: that the former was the fruit of personal experience, and what was called medical practice; the latter of the careful study and application of medical statistics. From the above considerations, he warned the directors of Insurance Offices against the error of choosing their medical advisers on account of their connections, or the recommendations that they might bring with them, or on any other ground whatever, except their knowledge of the business which they undertook to perform, seeing that they would do infinitely more harm by the admission of bad lives than they could possibly make amends for by any amount of patronage. He then alluded to the formation of the Epidemiological Society, of which he had the honour of being President, and expressed the hopes which he entertained, that through its labours much light would be thrown upon an obscure though very large class of diseases, which had a vast influence upon the duration of life, and consequently on the operation of Life Insurance Companies. He took the opportunity to express his thanks, and that of the body over which he presided, for the pecuniary assistance which several Insurance Offices had bestowed on the society, and ventured to recommend that so commendable an example should be followed by the rest. In conclusion, he expressed his obligation as a visitor to the Actuaries' Institute for the kind invitation they had given him to be present on this interesting occasion, and for the great hospitality with which he, in common with the other visitors, had been entertained.

This was the last toast; and thus ended an entertainment, which, served with great profusion and elegance, and varied by some excellent music and part-singing, appeared to give universal satisfaction.

[NOTE.—We regret that the length to which this Report has extended renders it impossible to insert in this Number the several papers referred to; they will, we hope, not fail to appear in our next.]